

Appl. No. 10/813,009

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MAR 02 2007

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A partner relay system for use in a communication system comprising a first transceiver and at least one second transceiver in which forward link transmissions occur in a downlink direction from the first transceiver to the at least one second transceiver and reverse link transmissions occur in an uplink direction from the at least one second transceiver to the first transceiver, the partner relay system comprising:

a first relay adapted to receive a first signal in the downlink direction on a first wireless transmission resource, perform a first signal translation on the first signal to a second transmission resource, and re-transmit the first signal in the downlink direction on the second wireless transmission resource;

a second relay in a spaced arrangement from said first relay adapted to receive the first signal in the downlink direction on the second wireless transmission resource from the first relay, perform a second signal translation to re-translate the first signal to the first wireless transmission resource, and re-transmit the first signal in the downlink direction;

wherein the first wireless transmission resource is a transmission resource allocated for forward link transmissions from the first transceiver, and the second wireless transmission resource is a transmission resource allocated for reverse link transmissions to the first transceiver.

2. (Original) A partner relay system according to claim 1 wherein each signal translation is an analog translation.

3. (Original) A partner relay system according to claim 2 wherein each signal translation is a frequency translation.

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4. (Original) A partner relay system according to claim 1 wherein the first signal is a CDMA signal.
5. (Currently amended) A partner relay system according to claim ~~1~~ 13 wherein the first wireless transmission resource comprises a first forward link channel on a first carrier frequency, and the second wireless transmission resource comprises a second forward link channel on a second carrier frequency.
6. (Currently amended) A partner relay system according to claim ~~1~~ 13 wherein the first signal on the first wireless transmission resource comprises a CDMA signal on a first carrier frequency, and the first signal on the second wireless transmission resource comprises a CDMA signal on a second carrier frequency.
7. (Original) A cellular communication system for servicing a wireless station, the cellular communication system comprising a base station and the partner relay system of claim 1;

wherein the first signal is transmitted by the base station, and the second relay re-transmits the first signal for reception by the wireless station.
8. (Cancelled)
9. (Original) A partner relay system according to claim 1 wherein the first wireless transmission resource comprises a first combined TDM/FDM resource, and the second wireless transmission resource comprises a second combined TDM/FDM resource.
10. (Original) A partner relay system according to claim 1 for use in a cellular communications system providing service to a wireless station, wherein the first relay comprises a first antenna for communicating with the cellular communications system, and a second directional antenna for communicating with the second relay, and wherein the second relay comprises a third directional antenna for communicating with the first relay, and a fourth antenna for communicating with the wireless station.
11. (Currently amended) A partner relay system according to claim 1 wherein:

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the second relay is further adapted to receive a second signal in the uplink direction on a third wireless transmission resource, perform a third signal translation to translate the second signal to a fourth wireless transmission resource and re-transmit the second signal in the uplink direction;

the first relay is further adapted to receive the second signal in the uplink direction on the fourth wireless transmission resource from the second relay, perform a fourth signal translation to re-translate the second signal to the third wireless transmission resource, and re-transmit the second signal in the uplink direction;

wherein the third wireless transmission resource is a transmission resource allocated for reverse link transmissions to the first transceiver and the fourth wireless transmission resource is a transmission resource allocated for forward link transmissions from the first transceiver.

12. (Currently amended) A partner relay system according to claim 4+ 13, wherein forward link transmissions occur in a downlink direction from the first transceiver to one of the second and third transceivers and reverse link transmissions occur in an uplink direction from one of the second and third transceivers to the first transceiver; and

wherein the first wireless transmission resource comprises a first forward link channel is a transmission resource allocated for forward link transmissions from the first transceiver to the second transceiver on a first carrier frequency, and the second wireless transmission resource comprises a second forward link channel is a transmission resource allocated for forward link transmissions from the first transceiver to the second transceiver on a second carrier frequency, and the third wireless transmission resource comprises a first reverse link channel is a transmission resource allocated for reverse link transmissions to the first transceiver from the second transceiver on the first carrier frequency, and the fourth wireless transmission resource comprises a second reverse link channel is a transmission resource allocated for reverse link transmissions to the first transceiver from the second transceiver on the second carrier frequency;

wherein a fifth wireless transmission resource is a transmission resource allocated for forward link transmissions from the first transceiver to the third transceiver between the first transceiver and the second relay on a first carrier frequency, a sixth wireless transmission

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resource is a transmission resource allocated for forward link transmissions from the first transceiver to the third transceiver between the second relay and the first relay on a second carrier frequency, a seventh wireless transmission resource is a transmission resource allocated for reverse link transmissions to the first transceiver from the third transceiver between the third transceiver and the first relay on the first carrier frequency, and an eighth wireless transmission resource is a transmission resource allocated for reverse link transmissions to the first transceiver from the second transceiver between the first relay and the second relay on the second carrier frequency.

13. (Currently amended) A partner relay system comprising:

a first relay adapted to receive a first signal on a first wireless transmission resource, perform a first signal translation on the first signal to a second transmission resource, and re-transmit the first signal on the second wireless transmission resource;

a second relay in a spaced arrangement from said first relay adapted to receive the first signal on the second wireless transmission resource from the first relay, perform a second signal translation to re-translate the first signal to the first wireless transmission resource, and re-transmit the first signal;

wherein:

the second relay is further adapted to receive a second signal on a third wireless transmission resource, perform a third signal translation to translate the second signal to a fourth wireless transmission resource and re-transmit the second signal;

the first relay is further adapted to receive the second signal on the fourth wireless transmission resource from the second relay, perform a fourth signal translation to re-translate the second signal to the third wireless transmission resource, and re-transmit the second signal;

A partner relay system according to claim 11 for relaying signals between a first transceiver and a second transceiver and relaying signals between the first transceiver and a third transceiver;

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wherein said first signal is from the first transceiver to the second transceiver and is relayed via the first relay and then the second relay, said second signal is from the second transceiver to the first transceiver is relayed via the second relay and then the first relay;

wherein a third signal from the first transceiver to the third transceiver is relayed via the second relay and then the first relay, and a fourth signal from the third transceiver to the first transceiver is relayed via the first relay and then the second relay;

wherein each signal transmitted between the first relay and the second relay is subject to signal translation prior to transmission by one of the relays and signal translation after reception by the other of the two relays.

14. (Original) A partner relay system according to claim 13 wherein said first and second signals are transmitted and relayed during first time slots, and said third and fourth signals are transmitted and relayed during second time slots.

15. (Original) A partner relay system according to claim 13 wherein the first wireless transmission resource is at least part of a first frequency band, the second wireless transmission resource is at least part of a second frequency band, the third wireless transmission resource is at least part of a third frequency band, and the fourth wireless transmission resource is at least part of a fourth frequency band.

16. (Original) A partner relay system according to claim 13 wherein each wireless transmission resource comprises at least one GSM channel.

17. (Original) A cellular communication system for servicing at least two wireless stations, the cellular communication system comprising a base station and the partner relay system of claim 13, wherein the first transceiver comprises the base station, and the second and third transceivers are wireless stations.

18. (Original) A partner relay system according to claim 11 wherein the first wireless transmission resource comprises a first combined TDM/FDM resource, and the second wireless transmission resource comprises a second combined TDM/FDM resource, the third wireless

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transmission resource comprises a third combined TDM/FDM resource, and the fourth wireless transmission resource comprises a fourth combined TDM/FDM resource.

19. (Original) A partner relay system according to claim 1 further comprising:

a third relay adapted to receive a second signal on a third wireless transmission resource, perform a third signal translation to translate the second signal to a fourth wireless transmission resource and re-transmit the second signal;

a fourth relay further adapted to receive the second signal on the fourth wireless transmission resource from the third relay, perform a fourth signal translation to re-translate the second signal to the third wireless transmission resource, and re-transmit the second signal.

20. (Original) A partner relay system according to claim 19 wherein the first wireless transmission resource comprises a first combined TDM/FDM resource, and the second wireless transmission resource comprises a second combined TDM/FDM resource, the third wireless transmission resource comprises a third combined TDM/FDM resource, and the fourth wireless transmission resource comprises a fourth combined TDM/FDM resource.

21. (Original) A partner relay system according to claim 1 further comprising:

a third relay adapted to receive a second signal on the second wireless transmission resource, perform a third signal translation to translate the second signal to the first wireless transmission resource and re-transmit the second signal;

a fourth relay adapted to receive the second signal on the first wireless transmission resource from the third relay, perform a fourth signal translation to re-translate the second signal to the second wireless transmission resource, and re-transmit the second signal.

22. (Currently amended) A method of relaying a signal in a communication system comprising a first transceiver and at least one second transceiver in which forward link transmissions occur in a downlink direction from the first transceiver to the at least one second transceiver and reverse link transmissions occur in an uplink direction from the at least one second transceiver to the first transceiver, the method comprising:

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receiving a first signal in the downlink direction on a first wireless transmission resource;

performing a first signal translation on the first signal to a second transmission resource and re-transmitting the first signal on the second wireless transmission resource in the downlink direction;

receiving the first signal in the downlink direction on the second wireless transmission resource;

performing a second signal translation to re-translate the first signal to the first wireless transmission resource and re-transmitting the first signal in the downlink direction;

wherein the first wireless transmission resource is a transmission resource allocated for forward link transmissions from the first transceiver, and the second wireless transmission resource is a transmission resource allocated for reverse link transmissions to the first transceiver.

23. (Currently amended) A method according to claim 22 further comprising:

receiving a second signal in the uplink direction on a third wireless transmission resource;

performing a third signal translation to translate the second signal to a fourth wireless transmission resource and re-transmitting the second signal in the uplink direction;

receiving the second signal in the uplink direction on the fourth wireless transmission resource;

performing a fourth signal translation to re-translate the second signal to the third wireless transmission resource and re-transmit the second signal in the uplink direction

wherein the third wireless transmission resource is a transmission resource allocated for reverse link transmissions to the first transceiver and the fourth wireless transmission resource is a transmission resource allocated for forward link transmissions from the first transceiver.